

## SNF Stabilization and Disposition (RL-0012)

P. M. Knollmeyer, Vice President of K Basins Closure/  
(509) 376-5600



*Booster Pump Station for Hose-in-Hose*



*New sludge vacuuming system  
debris trap and hoses*

## Overview

This section addresses work in Project Baseline Summary (PBS) RL-0012, *Spent Nuclear Fuel Stabilization and Disposition*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of May 2006.

## Notable Accomplishments

### SNF Stabilization and Disposition (PBS RL-0012)

**K Basins Closure Project:** The External Independent Review was successfully completed and the baseline was recommended for validation.

**Sludge Retrieval and Transfer:** K East Basin sludge vacuuming has completed 4,924 cubic feet (4,924 of 8,192 cubic feet, -119 to the schedule). Completed vacuuming of the South Loadout Pit, completed pre-installation checks on the robotic arm, continued consolidating debris in baskets and completed the Hazards Analysis on the Post Transfer/Sand Filter Replacement System.

K West Basin maintained ahead-of-schedule progress in debris removal (878 of 914 debris units completed, 138 ahead of schedule). K West loaded four IP-2 containers with 64 canister waste boxes and removed 32 pallets of contaminated lead shielding.

The Hose-in-Hose (HIH) project completed 31 of 39 construction acceptance tests. Completed: NEC inspections, UL508 recertification inspections, K East/K West pump rotation testing, pump control panel installation, and Basin Water Return pump control panel parts installation.

**Legacy Fuel:** Installed and tested Debris Canister Tool.

**Sludge Treatment Project (STP):** The subproject completed the review of the assay system 100 percent design, issued the Functional Design Criteria update, completed review of British Nuclear Group America (BNGA) Blending Options Study, finalized Pacific Northwest National Laboratory (PNNL) Uranium Corrosion Rates Paper, completed Updated construction estimates, completed review of BNGA white paper on Independent Review recommendations, received DOE approval for early procurement of Mobile Solidification System (MOSS), received DOE approval to execute Modification 4 to BNGA contract, performed Drum Handling Systems 90 percent review, and updated STP Risk Analysis to reflect impact of withdrawal of early procurement authority.

## Issues

**K East Sludge Vacuuming:** Progress in K East sludge vacuuming slowed by small debris entrained in the sludge and a decrease in visibility. Mitigation actions taken include: manufacture and use of different end effectors; installation of alternate vacuuming pump system (Vaughn Pump) for heavier debris removal; utilization of limited resources from K West to assist in maneuvering/relocating equipment in basin bays; installation of roughing strainers in vacuum pump line-up; revision to debris removal strategy; two week window in schedule to remove additional debris; and maintenance of spare parts.

## Issues, continued

**Sludge Transfer – HII testing:** Construction turnover/Integrated Test Plan (ITP) progress has been slower than planned. Mitigation actions taken include: retention of engineering resources to expedite correction of deficiencies; additional resources to ensure proper work package closeout; second shift and improved coordination of test sequencing (learning curve); plans for conduct of remaining Construction Acceptance Tests (second shift) in parallel with ITP progress on day shift; Con-Ops mentor reviews of planned process and procedure (three-point communication mentors; installed dedicated phone service line); FH HII support team reviewing readiness preparations and construction acceptance records (and others as identified); daily schedule meetings/status meetings; Emergency Preparedness Drills (positive results); and judicious use of overtime and second shift coordination.

**Sludge Treatment Risk Mitigation:** Delays in design are resulting from off-site dose hazard control analysis and design control decisions/procurement delays. Mitigating actions taken include: Vice President and Deputy are fully engaged in resolution of Hazards Analysis and Design Controls; direct control of Nuclear Safety/Hazards Analysis coordination by FH (previously PNNL lead); request and approval of limited procurement actions; re-planning at the direction of RL to implement risk mitigation actions; continued engagement between FH and BNGA senior management; and conduct of Lessons Learned Review and implementation of results.

## FY 2006 Funds vs. Spend Forecast (\$M)

		Projected FY 2006 Funding	FY 2006 Fiscal Year Spend Forecast	Variance
RL-0012	SNF Stabilization & Disposition	\$ 122.8	\$ 122.5	\$ 0.2
<b>Total</b>		<b>\$ 122.8</b>	<b>\$ 122.5</b>	<b>\$ 0.2</b>

## FY 2006 Schedule/Cost Performance (\$M)

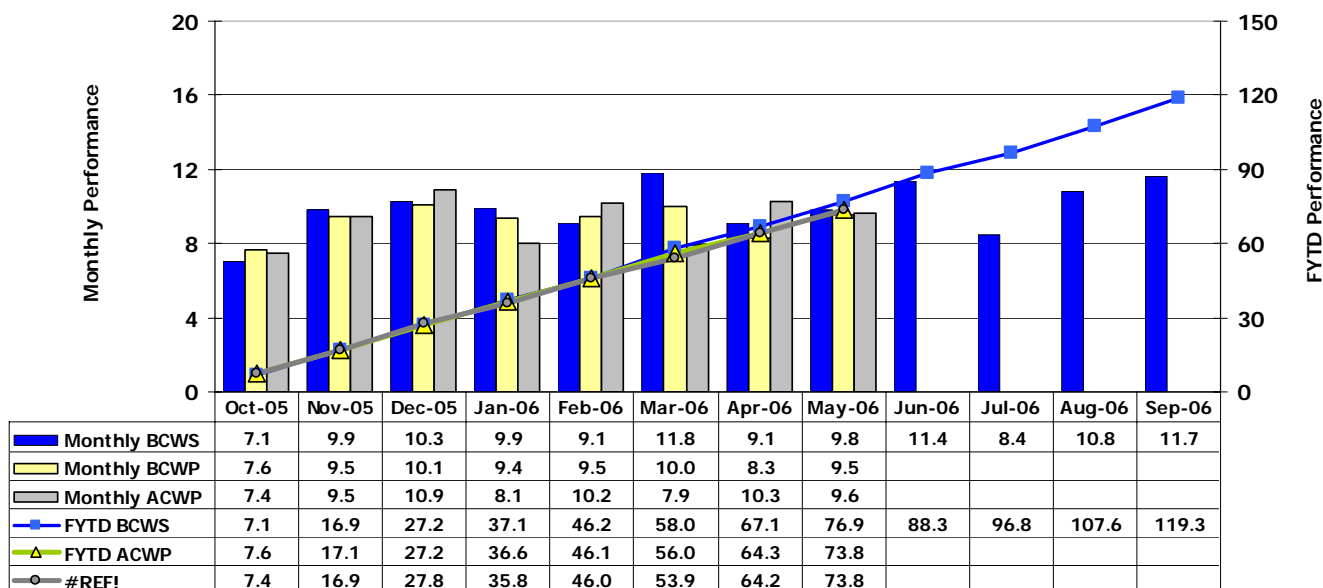
		Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
RL-0012	SNF Stabilization & Disposition	\$76.9	\$73.8	\$73.8	-\$3.1	-4.0%	\$0.0	0.0%	\$119.2
<b>Total</b>		<b>\$76.9</b>	<b>\$73.8</b>	<b>\$73.8</b>	<b>-\$3.1</b>	<b>-4.0%</b>	<b>\$0.0</b>	<b>0.0%</b>	<b>\$119.2</b>

Numbers are rounded to the nearest \$0.1M and include the closure services allocation.

- **Schedule Performance (-\$3.1M/-4.0%):** Schedule variance is within threshold.
- **Cost Performance (+\$0.0M/+0.0%):** Cost variance is within threshold.

## FY 2006 Schedule/Cost Performance (\$M), continued

### Performance Analysis FYTD and Monthly (\$M)



## Milestone Achievement

Number	Milestone Title	Type (TPA/PI/ DNFSB)	Due Date *	Actual Date	Forecast Date	Status / Comments
M-034-33B (S10-05-018)	Complete K East Sludge Containerization	TPA	03/01/05		09/20/06	Behind Schedule: not included in TPA change
RL-12-1.b (S10-99-082)	Transfer K East Sludge to K West Containers	PI	11/30/05		01/05/07	Behind Schedule
RL-12-1.bb (S10-99-963)	Transfer Found Fuel and Fuel Scrap from K East to K West	PI	11/30/05		09/25/06	Behind Schedule
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA	05/31/07		01/05/07	Ahead of Schedule
RL-12-1.ce (S10-99-978)	Complete K East Water Removal	PI	01/31/06		11/02/07	Behind Schedule
RL-12-1.ca (S10-99-967)	Encapsulate 3 K East Bays	PI	02/28/06		11/02/07	Behind Schedule
RL-12-1.cb (S10-99-968)	Remove K East Superstructure	PI	06/30/06		08/14/08	Behind Schedule
M-034-35a (S10-05-011)	Containerize K West Sludge	TPA	07/31/07		04/23/07	Ahead of Schedule
M-034-35b (S10-05-011)	Complete Final Pass	TPA	01/31/08		07/31/07	Ahead of Schedule
RL-12-1.cc (S10-99-969)	Complete First K East Basin Section Disposal	PI	07/31/06		12/12/08	Behind Schedule
RL-12-1.bd (S10-99-965)	Commencement of Floor and Canister Sludge Treatment	PI	07/31/06		01/14/09	Behind Schedule
RL-12-1.ci (S10-99-971)	Decon/Immobilize K West Basin Wall (7600 sq. ft.)	PI	08/31/06		12/28/09	Behind Schedule
RL-12-1.bc (S10-99-081)	Remove Found Fuel and Scrap	PI	09/30/06		07/18/08	Behind Schedule
RL-12-1.cf (S10-99-972)	Complete K East Basin Removal	PI	09/30/06		07/07/09	Behind Schedule
DNFSB 119E (S10-05-014)	Complete K East Sludge Consolidation	DNFSB	10/31/06		09/20/06	Ahead of Schedule
DNFSB 120E (S10-05-015)	Complete K East Basin Sludge Removal	DNFSB	05/31/07		01/05/07	Ahead of Schedule
DNFSB 122E	K East Final Pass Sludge Removed	DNFSB	05/31/07		01/05/07	Ahead of Schedule
DNFSB 119W (S10-05-016)	Complete K West Sludge Containerization	DNFSB	07/31/07		05/18/07	Ahead of Schedule

\* DNFSB dates reflect Implementation Plan update; TPA dates reflect change package M-34-05-04; forecast dates are current working level schedules.